

Claims

1. Container with a container body or lower element (2 – 2u) and with a closure (3 – 3u; 36, 37, 38, 44), characterized in that the lower container element (2 – 2u) and/or the closure (3 – 3u; 36 37, 38, 52) is elastically deformable in at least one partial section (4.1, 24, 43, 46, 59, 60, 61) with a high restoring force for creating a vacuum in the closed container.
2. Container according to claim 1, characterized in that the lower container element and/or the closure are formed at least in one partial section by a wall section (4.1, 24, 43, 46, 59, 60, 61) made of an elastic material with a high restoring force.
3. Container according to claim 1 or 2, characterized in that the lower container element and/or the closure outside of the at least one elastically deformable wall section is made of a hard material.
4. Container according to claim 2 or 3, characterized in that the at least one elastically deformable wall section (4.1) is formed by a membrane-like wall section of the closure (3 – 3u).
5. Container according to one of the foregoing claims, characterized in that the at least one elastically deformable partial section is formed by an accordion-like wall section (16, 24, 59) of the closure and/or of the lower container element (2 – 2u).
6. Container according to one of the foregoing claims, characterized in that the at least one elastically deformable partial section is formed by a convex wall section (19, 43, 16, 61) forming a bulge or a reduction.
7. Container according to one of the foregoing claims, characterized by means on the at least one elastically deformable section for increasing the restoring force.
8. Container according to one of the foregoing claims, characterized in that at least one ventilation opening that can be closed by a sealing element (7, 8, 14) is provided on the closure and/or on the lower container element.
9. Container according to claim 8, characterized in that the ventilation opening is provided in the container closure or lid.

10. Container according to one of the foregoing claims, characterized in that the ventilation opening is provided in the container body or in the lower container element.
11. Container according to one of the foregoing claims, characterized in that the sealing element of the at least one ventilation opening is a manually controllable valve (7).
12. Container according to one of the foregoing claims, characterized in that the sealing element on the ventilation opening is an automatic valve (8).
13. Container according to claim 12, characterized in that the valve comprises a valve body (11), which comprises an elastic or spring-action section (11.2) that works together with a valve seat on the ventilation opening.
14. Container according to claim 13, characterized in that the valve body (11) consists of a first section (11.1) made of a hard material for fastening the valve body and of an elastically deformable section (11.2) provided on the first section that works together with the valve.
15. Container according to claim 14, characterized in that the valve body is made of plastic, preferably using the two-component injection molding process.
16. Container according to one of the foregoing claims, characterized in that the elastically deformable wall section (4.1) is manufactured as one piece with the container closure and/or the container body or lower element, preferably of plastic using the two-component injection molding process.
17. Container according to one of the foregoing claims, characterized in that the at least one deformable section is formed by an element (4.1) that is connected with the container closure and/or the container body or lower element, for example by gluing, welding or joining.
18. Container according to one of the foregoing claims, characterized in that the container closure (3 – 3u) can be fastened on the container body or lower element (2 – 2u) in an airtight and/or gastight manner.
19. Container according to one of the foregoing claims, characterized in that the closure (3

- 3u) comprises an edge forming a circular groove (22, 56) and that when the container is closed one edge (55) of the lower container element is held by the groove (56).
- 20. Container according to claim 19, characterized in that the groove and the edge of the container body or lower container element comprise a self-sealing, e.g. wedge-shaped or approximately wedge-shaped cross section.
- 21. Container according to one of the foregoing claims, characterized in that a circular seal (57) is provided in the groove (56) and/or a circular seal (58) made of a soft elastic material is provided on the edge of the lower container element or container body.
- 22. Container according to one of the foregoing claims, characterized in that the seal (57, 58) is fastened to the closure (3 – 3u) and/or on the container body or lower element, for example by being molded on, e.g. using a two-component injection molding process.
- 23. Container according to one of the foregoing claims, characterized in that the groove holding the edge (55) of the container body or lower element is formed by a groove of a circular seal (25).
- 24. Container according to one of the foregoing claims, characterized in that the at least one elastically deformable section is formed by a seal (25) between the closure (3o) and the container body or lower element (2o).
- 25. Container according to one of the foregoing claims, characterized by its design as a container for keeping food fresh with a lower container element (2 – 2i) and a container lid (3 – 3i).
- 26. Container according to claim 25, characterized in that the elastically deformable section (4.1) is a section of the container lid.
- 27. Container according to claim 25 or 26, characterized in that the elastic deformable section is formed by an elastically deformable wall section (15).
- 28. Container according to claim 25 - 27, characterized in that the elastically deformable section is formed by an accordion-like section (16) of the walls of the container body (2g).

29. Container according to claim 25 - 28, characterized in that the elastically deformable section is formed by a convex section (16), preferably with reinforcing elements (17).
30. Container according to one of the foregoing claims, characterized in that the container body (2h – 2m) is designed as a can.
31. Container according to one of the foregoing claims, characterized in that the container lid (3m) is linked to the container body (2m) and/or can be locked on the container body by means of a bent-lever closure (20).
32. Container according to one of the foregoing claims, characterized by its design as a butter dish with a dome-shaped container lid (3n, 3o) and an essentially bottle-shaped lower container element (2n, 2o).
33. Container according to claim 32, characterized in that the deformable section on the container lid (3n) is designed for example in the form of an accordion-like section.
34. Container according to claim 32 or 33, characterized in that the deformable section is formed by a seal (25) between the container lid (3o) and the lower container element (2o).
35. Container according to one of the foregoing claims, characterized in that the container (1 – 1u) in closed condition can be deformed by the at least one elastic section in the direction of the container axis and/or radially to the container axis.
36. Container according to one of the foregoing claims, characterized in that the container lid (3p, 3qu) can be screwed onto the container body or the lower container element.
37. Container according to one of the foregoing claims, characterized in that the closure can be pressed onto the container body or the lower container element.
38. Container according to one of the foregoing claims, characterized in that the container body (2 – 2u) and/or the closure or the container lid (3 – 3u) are designed so that the containers can be stacked.
39. Container according to one of the foregoing claims, characterized in that the container

body or the lower container element has a round, oval or square cross section.

40. Container according to one of the foregoing claims, characterized in that the container body or the lower container element (2r, 39) is a bottle.
41. Container according to one of the foregoing claims, characterized in that the closure is formed by a cap (34) with an inner seal that can be placed on the mouth of the bottle, wherein the cap is made of the permanently elastic material in at least one partial section (4.1) of its bottom.
42. Container according to one of the foregoing claims, characterized in that the closure (36, 37, 38) forms an outwardly closed hollow body (36.1, 37.1, 38.1), which when the closure is placed on the container (39) is connected with the interior of the container, and that the hollow body (36.1, 37.1, 38.1) is made of the elastically deformable material with a high restoring force at least in one partial section of its peripheral wall.
43. Container according to one of the foregoing claims, characterized in that the elastic material with a high restoring force is an elastomer, preferably an elastomer available under the brand name Styroflex.
44. Container according to one of the foregoing claims, characterized in that the means for increasing the restoring force of material sections (17) are made of a permanently elastic material, preferably material sections (17) provided in grooves in the accordion-like wall section, for example ring-shaped material sections enclosing the container on its periphery.
45. Container according to one of the foregoing claims, characterized in that the sealing element (25) forming the elastically deformable section has a cross section with a larger cross section side in the axis direction parallel to the container axis than in an axis direction extending perpendicular to the same.
46. Container according to one of the foregoing claims, characterized by means for limiting the movement stroke of the at least one elastic section, for example by belts or stops bridging the at least one elastically deformable section (59).
47. Container according to one of the foregoing claims, characterized in that the at least one

elastically deformable section is formed by a reduction (60) or bulge (61) enclosing the container axis in a ring-shaped manner.

48. Container according to one of the foregoing claims, characterized in that the closure (44) consists of a ring-shaped closure body (45) with a seal (47) that can be placed on the respective container (49) and of a membrane closing the opening of the ring-shaped closure body, said membrane being made of the elastically deformable material with a high restoring force.
49. Container according to claim 48, characterized in that the closure body (45) forms a protruding edge (48) on one side opposing the seal (47).
50. Container according to one of the foregoing claims, characterized in that the closure (52) comprises a closure body (53) designed as a hollow body (53.1) with an opening enclosed by a ring seal (47) and that the hollow body (53.1) is made in at least one partial section of the elastically deformable material with a high restoring force.
51. Container according to one of the foregoing claims, characterized in that the closure (36, 37, 38, 44, 52) is designed as a re-closable closure for closing a container until the contents of the container are ultimately consumed.
52. Container according to one of the foregoing claims, characterized in that the closure and/or the container body outside of the elastically deformable section are made of a material other than plastic, for example of glass or metal.
53. Closure for a container, characterized in that the closure (3 – 3u; 36 37, 38, 52) is elastically deformable in at least one partial section (4.1, 24, 43, 46, 59, 60, 61) with a high restoring force for creating a vacuum in the closed container.
54. Closure according to claim 53, characterized in that the closure at least in one partial section of one wall section is formed from an elastic material with a high restoring force.
55. Closure according to claim 53 or 54, characterized in that the closure outside of the at least one elastically deformable wall section is made of a hard material.
56. Closure according to one of the foregoing claims, characterized in that the at least one

elastically deformable wall section (4.1) is formed from a membrane-like wall section of the closure (3 – 3u).

57. Closure according to one of the foregoing claims, characterized in that the at least one elastically deformable partial section is formed from an accordion-like wall section (16, 24, 59) of the closure.
58. Closure according to one of the foregoing claims, characterized in that the at least one elastically deformable partial section is formed by a convex wall section forming a bulge or a reduction.
59. Closure according to one of the foregoing claims, characterized by means on the at least one elastically deformable section for increasing the restoring force.
60. Closure according to one of the foregoing claims, characterized in that at least one ventilation opening that can be closed by a sealing element (7, 8, 14) is provided on the closure.
61. Closure according to one of the foregoing claims, characterized in that the sealing element of the at least one ventilation opening is a manually controllable valve (7).
62. Closure according to one of the foregoing claims, characterized in that the sealing element on the ventilation opening is an automatic valve (8).
63. Closure according to claim 62, characterized in that the valve comprises a valve body (11), which comprises an elastic or spring-action section (11.2) that works together with a valve seat on the ventilation opening.
64. Closure according to claim 63, characterized in that the valve body (11) consists of a first section (11.1) made of a hard material for fastening the valve body and of an elastically deformable section (11.2) provided on the first section that works together with the valve.
65. Closure according to claim 64, characterized in that the valve body is made of plastic, preferably using the two-component injection molding process.

66. Closure according to one of the foregoing claims, characterized in that the elastically deformable wall section (4.1) is manufactured as one piece with the closure, preferably of plastic using the two-component injection molding process.
67. Closure according to one of the foregoing claims, characterized in that the at least one deformable section is formed from an element (4.1) that is connected with the container closure, for example by gluing, welding or joining.
68. Closure according to one of the foregoing claims, characterized in that the container closure (3 – 3u) can be fastened on the container body or lower element (2 – 2u) in an airtight and/or gastight manner.
69. Closure according to one of the foregoing claims, characterized in that the closure (3 – 3u) comprises an edge forming a circular groove (22, 56) and that when the container is closed, one edge (55) of the lower container element is held by the groove (56).
70. Closure according to claim 69, characterized in that the groove and the edge of the container body or lower container element comprise a self-sealing, e.g. wedge-shaped or approximately wedge-shaped cross section.
71. Closure according to one of the foregoing claims, characterized in that a circular seal (57) is provided in the groove (56) and/or a circular seal (58) made of a soft elastic material is provided on the edge of the lower container element or container body.
72. Closure according to one of the foregoing claims, characterized in that the seal (57, 58) is fastened to the closure (3 – 3u), for example by being molded on, e.g. using a two-component injection molding process.
73. Closure according to one of the foregoing claims, characterized in that the groove holding the edge (55) of the container body or lower element is formed by a groove of a circular seal (25).
74. Closure according to one of the foregoing claims, characterized in that the at least one elastically deformable section is formed by a seal (25) on the closure (3o).
75. Closure according to one of the foregoing claims, characterized in that the closure (3p,

- 3qu) can be screwed onto the container body or the lower container element.
76. Closure according to one of the foregoing claims, characterized in that the closure can be pressed onto the container body or the lower container element.
77. Closure according to one of the foregoing claims, characterized in that the closure is formed by a cap (34) with an inner seal that can be placed on the mouth of a bottle, wherein the cap is made of the permanently elastic material in at least one partial section (4.1) of its bottom.
78. Closure according to one of the foregoing claims, characterized in that the closure (36, 37, 38) forms an outwardly closed hollow body (36.1, 37.1, 38.1), which when the closure is placed on the container (39) is connected with the interior of the container, and that the hollow body (36.1, 37.1, 38.1) is made of the elastically deformable material with a high restoring force at least in one partial section of its peripheral wall.
79. Closure according to one of the foregoing claims, characterized in that the elastic material with a high restoring force is an elastomer, preferably an elastomer available under the brand name Styroflex.
80. Closure according to one of the foregoing claims, characterized in that the sealing element (25) forming the elastically deformable section has a cross section with a larger cross section side in the axis direction parallel to the container axis than in an axis direction extending perpendicular to the same.
81. Closure according to one of the foregoing claims, characterized by means for limiting the movement stroke of the at least one elastic section, for example by belts or stops bridging the at least one elastically deformable section (59).
82. Closure according to one of the foregoing claims, characterized in that the closure (44) consists of a ring-shaped closure body (45) with a seal (47) that can be placed on the respective container and of a membrane closing the opening of the ring-shaped closure body, said membrane being made of the elastically deformable material with a high restoring force.
83. Closure according to claim 82, characterized in that the closure body (45) forms a

protruding edge (48) on one side opposing the seal (47).

84. Closure according to one of the foregoing claims, characterized in that the closure (52) comprises a closure body (53) designed as a hollow body (53.1) with an opening enclosed by a ring seal (47) and that the hollow body (53.1) is made in at least one partial section of the elastically deformable material with a high restoring force.
85. Closure according to one of the foregoing claims, characterized in that the closure (36, 37, 38, 44, 52) is designed as a re-closable closure for closing a container until the contents of the container are ultimately consumed.
86. Closure according to one of the foregoing claims, characterized in that the closure outside of the elastically deformable section is made of a material other than plastic, for example of glass or metal.
87. Automatic valve for closing an opening (10), with a valve seat enclosing the opening and with a valve body (11), which comprises one elastic or spring-action section (11.2) working together with the opening, characterized in that the valve body (11) consists of one first section (11.1) made of a hard material for fastening the valve body and of one elastically deformable section (11.2) provided on the first section that works together with the valve.
88. Closure according to claim 87, characterized in that the valve body is made of plastic, preferably using the two-component injection molding process.